

FIGURE 1.

A graph showing the relationship between the electromotive force (emf) in Volts (V) and the percentage of hydrogen gas in a mixture. The y-axis, labeled 'emf (V)', is linear and ranges from 0.0 to 0.9 with major ticks every 0.1 units and minor ticks every 0.02 units. The x-axis, labeled 'Percent Hydrogen', is logarithmic and ranges from 10^{-2} to 10^2 with major ticks at 10^{-2} , 10^{-1} , 10^0 , 10^1 , and 10^2 . Five data points are plotted as open circles, and a straight line is drawn through them. The data points are approximately at (0.01, 0.60), (0.1, 0.65), (1, 0.68), (10, 0.72), and (100, 0.75).

Percent Hydrogen	emf (V)
10^{-2}	0.60
10^{-1}	0.65
10^0	0.68
10^1	0.72
10^2	0.75

A line graph showing the relationship between emf (V) on the y-axis and Time (s) on the x-axis for five different concentrations of NaOH solution: 100 %, 10 %, 1 %, 0.1 %, and 0.01 %. The y-axis ranges from 0.0 to 1.0 V with major ticks every 0.1 V. The x-axis ranges from 0 to 400 s with major ticks every 50 s. All curves start at (0,0) and rise to a plateau. The 100 % curve (dotted line) rises most steeply, reaching a plateau of approximately 0.74 V within 20 seconds. The 10 % curve (long dashed line) reaches a plateau of approximately 0.71 V. The 1 % curve (short dashed line) reaches a plateau of approximately 0.68 V. The 0.1 % curve (solid line) reaches a plateau of approximately 0.65 V. The 0.01 % curve (dash-dot line) rises most gradually, reaching a plateau of approximately 0.60 V after 350 seconds.

Time (s)	100 %	10 %	1 %	0.1 %	0.01 %
0	0.00	0.00	0.00	0.00	0.00
20	0.74	0.65	0.60	0.45	0.05
50	0.74	0.71	0.68	0.62	0.15
100	0.74	0.71	0.68	0.65	0.45
200	0.74	0.71	0.68	0.65	0.55
300	0.74	0.71	0.68	0.65	0.58
400	0.74	0.71	0.68	0.65	0.60

Figure 3. Response time of sensor to various hydrogen concentrations in nitrogen, after exposure to air.

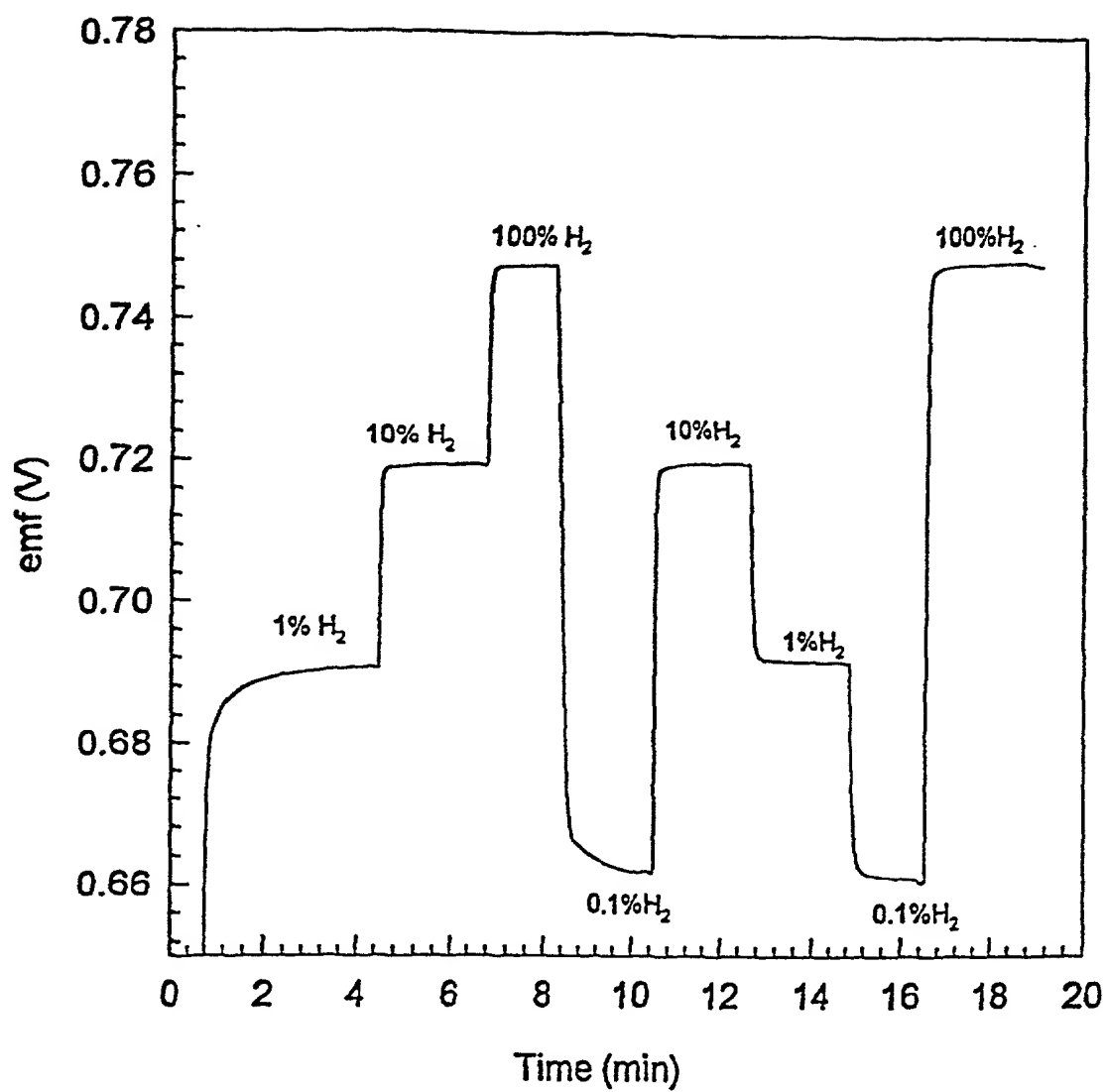


Fig. 4. The response time of the sensor to various hydrogen concentrations in nitrogen without exposure to air